SEQUENCE LISTING

<110> DANIELL, HENRY

<120> PRODUCTION OF PHARMACEUTICAL PROTEINS IN TRANSGENIC PLASTIDS

<130> 1465-PCT-US-00

<140> 09/807,742
<141> 2001-04-18

<150> PCT/US01/06288
<151> 2001-02-28

<160> 19

<170> PatentIn Ver. 2.1

<210> 1
<211> 1250
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<220>
<223> This sequence may encompass 1-250 Gly Val Gly Val Pro repeats

<400> 1
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1 5 10 15

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
20 25 30

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
35 40 45

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
50 55 60

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro
65 70 75 80

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly
85 90 95

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
100 105 110

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
115 120 125

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
130 135 140

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro

145 150 155 160

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly
165 170 175

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
180 185 190

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
195 200 205

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
210 215 220

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro
225 230 235 240

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly
245 250 255

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
260 265 270

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
275 280 285

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
290 295 300

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro
305 310 315 320

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly
325 330 335

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
340 345 350

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
355 360 365

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
370 375 380

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro
385 390 395 400

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly
405 410 415

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
420 425 430

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
435 440 445

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
450 455 460

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro
465 470 475 480

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly
485 490 495

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
500 505 510

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
515 520 525

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
530 535 540

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro
545 550 555 560

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly
565 570 575

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
580 585 590

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595 600 605

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
610 615 620

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro
625 630 635 640

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645 650 655

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
660 665 670

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
675 680 685

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
690 695 700

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro
705 710 715 720

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly
725 730 735

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
740 745 750

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
755 760 765

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
770 775 780

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro
785 790 795 800

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly
805 810 815

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
820 825 830

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
835 840 845

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
850 855 860

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro
865 870 875 880

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly
885 890 895

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
900 905 910

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
915 920 925

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
930 935 940

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro
945 950 955 960

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly
965 970 975

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
980 985 990

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
995 1000 1005

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
1010 1015 1020

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro
1025 1030 1035 1040

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly
1045 1050 1055

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
1060 1065 1070

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
1075 1080 1085

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
1090 1095 1100

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro
1105 1110 1115 1120

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly

1125 1130 1135

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
1140 1145 1150

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
1155 1160 1165

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
1170 1175 1180

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro
1185 1190 1195 1200

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly
1205 1210 1215

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
1220 1225 1230

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
1235 1240 1245

Val Pro
1250

<210> 2
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Illustrative endoplasmic reticulum retention signal

<400> 2
Ser Glu Lys Asp Glu Leu
1 5

<210> 3
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Illustrative peptide

<400> 3
Gly Pro Gly Pro
1

<210> 4
<211> 25
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 4
ccgtcgacgt agagaagtcc gtatt 25

<210> 5
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 5
gcccatggta aaatcttggt ttattta 27

<210> 6
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 6
cctttaaaaa gccttccatt ttctattt 28

<210> 7
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 7
gccatggtaa aatcttggtt tatta 25

<210> 8
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Illustrative preferred nucleotide sequence

<400> 8
tttcgtttca gt 12

<210> 9
<211> 5
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 9
Ala Val Gly Val Pro
1 5

<210> 10
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Illustrative
peptide

<400> 10
Glu Asn Leu Tyr Phe Gln Gly
1 5

<210> 11
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Illustrative
peptide

<400> 11
Leu Val Pro Arg Gly Ser
1 5

<210> 12
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: 6-His tag

<400> 12
His His His His His His
1 5

<210> 13
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 13
aaaacccgtc ctcagttcgg attgc 25

<210> 14
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 14
ccgcgttgtt tcatcaagcc ttacg 25

<210> 15
<211> 119
<212> PRT
<213> Escherichia coli

<400> 15
Gly Ile Val Pro Gly Val Gly Ile Val Pro Gly Val Gly Ile Val Pro
1 5 10 15

Gly Val Gly Ile Val Pro Gly Val Gly Ile Val Pro Gly Val Gly Ile
20 25 30

Val Pro Gly Val Gly Ile Val Pro Gly Val Gly Ile Val Pro Gly Val
35 40 45

Gly Ile Val Pro Gly Val Gly Ile Val Pro Gly Val Gly Ile Val Pro
50 55 60

Gly Val Gly Ile Val Pro Gly Val Gly Ile Val Pro Gly Val Gly Ile
65 70 75 80

Val Pro Gly Val Gly Ile Val Pro Gly Val Gly Ile Val Pro Gly Val
85 90 95

Gly Ile Val Pro Gly Val Gly Ile Val Pro Gly Val Gly Ile Val Pro
100 105 110

Gly Val Gly Val Pro Gly Val
115

<210> 16
<211> 260
<212> DNA
<213> Homo sapiens

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gaacgaggct tcttctacac acccaagacc cgccgggagg cagaggacct gcaggtgggg 120
caggtggagc tgggcggggg ccctggtgca ggcagcctgc agcccttggc cctggagggg 180
tccctgcaga agcgtggcat tgtggaacaa tgctgtacca gcatctgctc cctctaccag 240
ctggagaact actgcaacta 260

<210> 17
<211> 260
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Chloroplast
modified proinsulin sequence

<400> 17
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gaacgtggtt tcttctacac tcctaaaact cgtcgtgaag ctgaagattt acaagtaggt 120
caagtagaat taggtggtgg tcctggtgct ggttctttac aacctttagc tttagaaggt 180
tctttacaaa aacgtggtat tgtagaacaa tgttgtactt ctatttgttc tttataccaa 240
ttagaaaact actgtaacta 260

<210> 18
<211> 210
<212> DNA
<213> Homo sapiens

<400> 18
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aggggctttt atttcaacaa gcccacaggg tatggctcca gcagtcggag ggcgcctcag 120
acaggcatcg tggatgagtg ctgcttccgg agctgtgatc taaggaggct ggagatgtat 180
tgcgcacccc tcaagcctgc caagtcagct 210

<210> 19
<211> 210
<212> DNA
<213> Homo sapiens

<400> 19
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cgtggtttct atttcaacaa acctactggt tacggttctt cttctcgtcg tgctcctcaa 120
actggtattg tagatgaatg ttgtttccgt tcttgtgatt tacgtcgttt agaaatgtac 180
tgtgctcctt taaaacctgc taaatctgct 210